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ABSTRACT

The purpose of this learning packet is to help teacher educators introduce their students to the Educational Resources Information Center (ERIC) system. The packet was prepared with students' papers and projects in mind and is divided into three sections: (1) "ERIC Handbook for Professors of Education: Instructional Materials for Use with Students," which includes a complete lesson plan (goals and objectives, a lecture outline, equipment and materials needed, and suggestions for guiding students' writing; (2) instructional aids (transparency masters and a quiz to help instructors assess students' learning); and (3) masters for making multiple copies of a handbook for students ("ERIC Handbook for Teachers in Training"). Instructors are encouraged to copy the material, which teaches students how to do manual and computer searches for documents available in the ERIC database. (TES/CH)

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ERIC for Teachers in Training: An Instructional Package for Professors

containing:

- lesson plans (for professors)
- assessment instrument (student quiz)
- transparency masters for overhead projection
- masters for *ERIC Handbook for Teachers in Training*
- techniques for helping students develop research papers

Prepared by staff of the

ERIC

Clearinghouse of Rural Education and Small Schools (ERIC/CRESS)
P.O. Box 1348, Charleston, WV 25325
Craig B. Howley, Editor

April 1989

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Instructional Materials for Use With Students

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Intended for use with the ERIC Handbook for Teachers in Training

The Appalachia Educational Laboratory (AEL), Inc., works with educators in ongoing R & D-based efforts to improve education and educational opportunity. AEL serves as the Regional Educational Laboratory for Kentucky, Tennessee, Virginia, and West Virginia. It also operates the ERIC Clearinghouse on Rural Education and Small Schools. AEL works to improve:

- professional quality,
- curriculum and instruction,
- community support, and
- opportunity for access to quality education by all children.

Information about AEL projects, programs, and services is available by writing or calling AEL, Post Office Box 1348, Charleston, West Virginia 25325; 800/624-9120 (outside WV), 800/344-6646 (in WV), and 347-0400 (local).

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Ted Brandhorst, director of the ERIC Facility in Rockville, MD, edited the manuscript to help correct inaccuracies and misstatements.

The generosity of these colleagues has improved the draft. The remaining errors adhere to the editor, to his possible chagrin.

A Note to Professors

Conventional wisdom has it that those who need the ERIC system most (teachers) use it least. The assertion is not always true: there are teachers who consult the ERIC database often. Such teachers are usually good teachers.

The purpose of this learning packet is to help you introduce your students to the ERIC system, so that they can become good teachers who consult the professional literature to help them deal thoughtfully with instructional needs. Professionals, and especially teachers and administrators, cannot afford to act in ignorance of the work of others.

Of course, consulting the literature is not enough. Students must also understand it, critique it, and apply it in ways that make sense. For that reason, you will probably expect your students to develop papers about their professional reading or to develop projects that apply their understanding.

This packet has been prepared with students' papers and projects in mind. It includes the following materials:

- a complete lesson plan, including goals and objectives, a lecture outline, equipment and materials needed, and suggested alternatives for instruction;
- transparency masters for use with your classes;
- a Handbook for students (which you can freely duplicate);
- suggestions for guiding students' writing; and
- a quiz to help you assess students' learning.

Please feel free to modify or adapt these materials in any way that you think suits the needs of your students. Please share them with other

instructors, if you find these materials have merit. For example, your department may want to make sure all education students receive a copy of the Student Handbook. The materials are not copyrighted.

Perhaps the professionalism of teachers is largely a question of self-regard and responsible action. Your students, of course, may not really understand this point at present. Nonetheless, we hope that reading and writing will be an important part of life in the classrooms in which they teach. As an accessible archive of information about schooling, the ERIC system can help your students become good teachers. Thank you for ordering these materials from the ERIC Clearinghouse on Rural Education and Small Schools.

LESSON PLAN

Goal:

The instructor will prepare students to use the ERIC database to carry out research in education.

Objectives:

Students will ...

1. correctly distinguish between cataloging and indexing fields when presented with a list of four data fields used in ERIC resumes.

2. correctly identify Venn diagrams of simple search strategies.

3. correctly identify the three major sections of the Thesaurus of ERIC Descriptors.

4. identify at least two features that distinguish between the RIE and the CIJE abstract journals.

5. correctly identify the differences among level 1, level 2, and level 3 RIE documents.

6. correctly distinguish among three ERIC publication types: research/technical reports, information analyses, and evaluative/feasibility reports.

7. correctly distinguish two techniques to limit the scope and output of an ERIC search.

8. successfully conduct an ERIC search to develop a reference list of 20 sources in the reference style of the American Psychological Association (APA).

Materials:

1. Lesson plan

2. 13 transparencies

3. Student Handbook (copies for each student)

4. Quiz

5. CD-ROM search software, installed (optional)

Equipment:

1. overhead projector
2. microcomputer and CD-ROM player (optional)
3. plasma display panel (optional)
4. compatible printer (optional)

Student Characteristics:

- Most undergraduate students will not be familiar with the ERIC system, but some may.
- You may want to determine the level of knowledge of these students. This lesson is probably not appropriate for students who can carry out objective 8 (see above).
- If many students are not familiar with APA reference style or will have difficulty applying the concepts that govern the use of logical (i.e., Boolean) operators, you will probably need to devote more than one class period to this lesson.

Time:

- You can present the basic information in one standard 45-minute class.
- If students need an introduction to APA reference style or more work with understanding logical operators, plan to devote at least two class sessions to this lesson.
- If you plan to give students guided practice with the use of CD-ROM to search ERIC, you will need to devote additional time to this lesson.

Outline of Class Presentation

I. Introduction

Throughout this lesson, try to impress students with the professional importance of consulting the literature on education, much of which the ERIC database encompasses. The tools and techniques they will learn about in this lesson will help them create solutions for the problems they will confront as teachers. Use examples from your own experience and the experience of your colleagues to illustrate this point.

A. The literature on education

Describe the literature on education as consisting of books, journal articles, or documents. Different kinds of documents are: official reports, conference papers, curriculum guides, and so forth (see ERIC Ready Reference #2, "ERIC Publication Types" for help in planning your remarks here).

Use transparency #1 (types of publications).

B. Finding the literature on education.

Elicit from students ways they find professional literature about education. Likely responses will include library card catalogs, computerized public access catalogs, the Readers' Guide to Periodical Literature and the Education Index. Discuss the way in which these indexes are organized. (Review ERIC Ready Reference #3, "Sample RIE Resume" to help you draw out possible contrasts). Some students may already be aware of the CIJE and the RIE, of course.

C. Electronic databases and ERIC

Discuss the nature of electronic databases. Many students will be familiar with the use of database software. Describe the ERIC database, and review its history, briefly. Consult "A Brief Sketch of the ERIC System," in the Student Handbook for some background information. Consult Trester's 1979

monograph, ERIC: The First Fifteen Years, (ERIC Document Reproduction Service No. ED 195 289) for a complete history.

II. The Structure of the ERIC Database

A. The CIJE (Current Index to Journals in Education) and the RIE (Resources in Education)

Distinguish between the index of journals (CIJE) and the index of documents (RIE). Note that they are separate paper indexes, but that they are combined in the electronic database. Introduce students to the general structure of ERIC resumes. Stress the fact that, because articles and documents differ in many ways, their resumes differ.

B. ERIC resumes

Review the fields that appear in RIE and CIJE resumes. Distinguishing features include: journal citation field usually in CIJE only; level fields in RIE only (be sure students can distinguish between level 1, 2, and 3 documents); sponsoring agency field in RIE only; abstracts longer in RIE; most (98%) RIE documents available on microfiche (most important distinction for students to remember).

Distinguish between cataloging fields (all fields down to descriptors and identifiers) and indexing fields (descriptors and identifiers only).

Use transparencies #2 (RIE and CIJE fields) and #3 (cataloging fields and indexing fields).

Describe the two types of abstracts: indicative (usually used to indicate the contents of lengthy documents, like conference proceedings) and informative (used to summarize what documents and articles actually say).

Use transparency #4 (abstracts).

C. The Thesaurus and the controlled vocabulary

Ask students to describe the purpose of an index and how they think indexes are made. Probe as necessary. Ask students, or describe to them, the typical ways in which the terms of an index are related to one another.

Describe the relationships that characterize ERIC descriptors (broader, narrower, and related terms; descriptor groups). There are about 10,000 descriptors; all belong to one of 41 groups. Give some examples.

Use transparency #5 (relationships among descriptors).

Explain where descriptors come from (for example, one source is the 40,000 identifiers presently in use; clearinghouses add identifiers routinely; and they sometimes propose frequently-used identifiers as descriptors). The ERIC Vocabulary Review Group and the ERIC lexicographer rule on proposed descriptors.

III. Searching the ERIC Database

A. Selecting a topic

Review, perhaps in discussion format, the techniques involved in selecting a topic to research. You might mention (a) reviewing a textbook for interesting issues; (b) the need to do some background reading on the interesting issue; (c) the need to list related, narrower, and broader topics within a general issue. Make sure students understand that any topic choice is tentative. Once a search has begun, students may need to narrow or broaden a topic. Explain that background reading is important because it gives students some sense of the scope of the issue that interests them. See "Guiding Students' Writing" for a more complete discussion of this point.

B. Using the Thesaurus of ERIC Descriptors

Describe the three main sections of the Thesaurus (Alphabetical Display, Rotated Display, Hierarchical Display). Show students how to translate ordinary English terms into descriptors using the Rotated Display (first, to see if common English terms translate into descriptors) and second the Alphabetical Display (to determine how the given descriptor has been used by the system.) Be sure to explain the use of the following terms: scope notes; list of related, broader, and narrower descriptors; and posting notes (date first used, number of postings in CIJE and RIE).

Use transparencies #6 (Rotated Display) and #7 (Alphabetical Display)

C. Kinds of ERIC searches

Explain manual and electronic searches. Manual searches use the paper indexes, electronic searches use computers with the machine-readable files (on-line or CD-ROM).

Describe the pros and cons of manual as compared to electronic searching. Manual searching may allow for more reflection because it takes longer than electronic searching.

Electronic searching, if done badly, yields many irrelevant citations. Electronic searching is faster and more powerful than manual searching, but it takes more knowledge, practice, and experience. Basic computer literacy and typing skills are helpful.

Novices should try several manual searches to give them the experience they will need later to do computer searches well.

D. Manual searches

Explain how to conduct searches on single descriptors in the paper indexes (using the RIE and the CIJE paper indexes). You might want to concentrate on explaining the use of the subject sections of each paper index.

Explain that electronic media allow searchers to combine descriptors for faster, more powerful searches. Illustrate the differences with examples.

E. Electronic searches (overview)

Explain the difference between on-line and CD-ROM searches. Your presentation, however, will depend on local circumstances. If CD-ROM units are available, you may want to concentrate on explaining their use. CD-ROM may provide easier access to the ERIC database than on-line service, for which there may be charges, and which may require students to use "search intermediaries."

If you can bring a CD-ROM unit to class, and your department or school has a plasma display panel, then you may be able to demonstrate searching techniques and offer hands-on practice for electronic searching in class. You may want to offer an out-of-class session for such practice, however.

F. Electronic searches (specific coordinated searching techniques)

Explain the use of the logical operators "and," "or," and "not" to students. (The exact terms will vary according to the CD-ROM or on-line system you are explaining.) This presentation is based on those used by the SilverPlatter system. Some students may find this explanation difficult, and you may need to spend extra time illustrating the ideas behind the use of logical operators. Guided hands-on experience will be helpful to most students.

Use transparencies (coordinated search sets) labelled "Figure 1, Figure 2, Figure 3, Figure 4, and Figure 5," which are reproductions of the figures in the Handbook for Teachers in Training, pages 8-11. You may need to adapt these transparencies, depending on the features of the system you are explaining.

Show students how to limit the scope of searches by using logical operators in combination with certain fields (publication year, document type numbers, and major descriptors, especially). Major descriptors are those that appear in the printed indexes. Searching systems vary in the procedures they use to "major" a descriptor.

Use transparency #8 (limiting your search).

IV. Developing a Reference List (APA style)

A. Review APA reference style

The reference style of the American Psychological Association is the most common style used in education, but its use is not universal. Rules, of course, vary by publication type, but review the format for common types: journal articles, books, book chapters, and reports.

B. Getting the information needed for a reference list

Tell students that electronic searches produce copies of resumes and can also produce ASCII text files of resumes on floppy disks. These files can later be used to produce paper copies on IBM-compatible microcomputers.

Students should know that the ERIC author field lists only one or two authors. If there are three or more authors, the author field will give only the name of the first author and the phrase "and others." Caution students to consult the original article or document for a complete list of authors. Caution students to record journal volume, issue, and page numbers for articles. Tell students to refer to the Student Handbook for tips on using the ERIC database to develop a reference list.

V. Getting Paper Copies of Articles and Documents

A. Articles

This part of the presentation also depends on local circumstances. Your library may have a large or a small journal collection. Journals may be available on microfilm, as paper copies, or both. Let students know about the availability of journal articles on interlibrary loan or from University Microfilms International (UMI), or from other sources of which you are aware.

B. Documents

Local circumstances will determine the nature of this discussion also. Your library may have a complete microfiche collection, or none at all. Let students know about the availability of ERIC documents from the ERIC Document Reproduction Service (EDRS). If other academic libraries nearby have a microfiche collection, let them know about that, too.

Guiding Students' Writing

Many of us who work in the ERIC system have taught students in education courses, and many of us have contributed our own professional work to the ERIC database. We think writing is an important professional activity.

The clearinghouse staff would like to share some techniques they and their colleagues have used recently to help students develop good papers. Special thanks to Aimee Howley of the University of Charleston (WV) for sharing her ideas for helping students become better writers.

These techniques are not intended to apply to classes larger than 20 or 30 students, but some of them can be adapted to such situations. We'll keep our discussion brief.

Selecting a Topic

It is difficult to write well, and the first step is particularly difficult for some students. Here is one way to make the task more accessible to them:

- Have students scan their textbooks to make a list of interesting broad topics.
- From that list, have them select one broad topic (for example, language experience methods).
- Have students locate and read several articles and book chapters (from a wide variety of sources) about the broad topic.
- When they finish, have them list several narrow topics within the broad topic, and ask them to select one narrow topic about which to develop an abstract.

Drafting an Abstract

A draft abstract will help students define the scope of their work. Abstracts can serve as a statement of students' intent. The steps are as follows:

- Have students read several more sources (perhaps three or four articles or scholarly papers) about the narrow topic they have chosen.
- Ask each of them to state the scope of the paper as a question. This step will help them focus their narrow topics.
- Finally, have each student develop several sentences that explain how the question is related to the narrow topic.

Both of these steps require students to do some extra background reading. Some students--usually those who have not developed the habit of reading--will resist. A series of formal steps like these can help students overcome their resistance. You may need to insist that students turn in their background reading lists, their lists of topics, and their abstracts. The requirements, of course, will depend on the characteristics of the students with whom you are working. You can develop a formal assignment sheet to help students complete the tasks you assign.

Searching the Literature

The instruction you provide will help students search the relevant literature. Of course, they should not rely only on the literature in the ERIC database. They will also need to consult the card catalog, the Social Science Index, and Psychological Abstracts, depending on the nature of their topic.

The Handbook for Teachers in Training included in this packet will also help students conduct their own searches, and perhaps some of the ERIC searching techniques they learn will apply to other databases. The Handbook

contains a review of American Psychological Association (APA) reference style and gives students tips on the information they will need when they prepare their reference lists.

You may want to provide tutorials for students to help them develop specific search strategies, particularly if they are using the computerized version of the ERIC database. Students need to understand that it takes time to learn the efficient use of logical operators and limit fields to focus their searches. Guided hands-on experience with CD-ROM will help them. Perhaps you can arrange for a demonstration with the reference department of your library.

Selecting the Best References and Reading

You may want to approve students' reference lists, or set some criteria to help students locate the most relevant information. One technique you might consider is the point-counterpoint paper.

Point-counterpoint papers are a species of compare-and-contrast paper. The final product is a short and cogent discussion that compares and contrasts the views of two authors about the narrow topic students have described in their abstracts.

You may need to develop an assignment sheet to structure the task for students, and you may want to provide students with a model. You may also need to discuss the various kinds of studies and research methods that students are likely to encounter in their reading, or you may want to limit their reading to certain types of studies or reports.

Most education students find this assignment challenging. They are seldom asked to analyze written texts so carefully. The assignment, however, has

several benefits. It guides students' reading; it coaches them in the skills needed to critique research; and it helps them develop part of the discussion that will appear in their longer papers.

Preparing the Rough Draft

When students have completed their reading, they can start writing (unless they have decided to redefine the topic). Students should be aware that they can adjust the topic of their papers if necessary, and if timely. Last minute changes, however, are sometimes a bad sign. Using a writing process such as that outlined here can help students avoid last-minute crises.

Outlines are one method to structure writing. Not all good writers work from outlines, but developing an outline--however sketchy--is probably a helpful step.

Depending on the nature of the writing assignment, you may want all students to follow a similar structure. The structure can be quite loose or it can be tight, depending on the assignment and the needs of your students. Again, students will find a model helpful. The identity of the author of the model paper, of course, should be kept confidential.

It's a good idea to ask students to cite their sources (in text) in their rough drafts. If you think students will have trouble following APA reference style (or whichever style you require them to use), you may want to ask for a draft reference list as well.

Finally, encourage (or, if possible, require) students to compose their rough drafts on a word processor. It makes revisions a lot easier, and writing is a process of revising successive drafts.

Revisions

Those of us who write regularly--and who are older than thirty--may remember with some regret our undergraduate papers. Whether or not we wrote slowly and carefully, or whether or not we finished our assignments with time to spare, still we probably had the same goal: writing an acceptable paper with minimal revisions.

Today, computers make the process of revision accessible to many more students. Word processing does away with the labor of re-keying an entire paper.

If you adopt a schedule for students to follow in developing their papers, and if you stick to it, students will have time to revise their papers. Many alternatives, however, are possible to help relieve you of the burden of correcting every detail of every draft:

- Use a structured rating form to provide feedback to students. The more specific the feedback, the better.
- Develop a blind peer-review process in which students critique one another's drafts.
- Assign student editors to critique the papers. Every student might serve as an editor, or you might select only certain students to serve as editors.
- Use a computerized expert-system to critique student drafts. Such systems are not for weak writers, however. Perhaps they will serve you best as an aid in your own review of student work. Several systems are commercially available. Experiment with the system to see how you can use it best.

Afterword

We hope these suggestions give you some useful ideas about the larger scope of which training students to use the ERIC database is a part. In some

ways, writing is the culminating event of learning. It is certainly an important part of being a teacher.

Types of Publications

Publication	ERIC Document Type Number
Books	010
Basic Research	143
Evaluation Studies	142
Literature Reviews	070
Essays	120
Journal Articles	080

Transparency #1

RIE and *CIJE* Fields (ERIC Database)

This is a sample of fields. A document may be described by more than 22 fields. Boldfaced type shows how the *RIE* and *CIJE* differ.

Field Name	Abbrev.	RIE	CIJE
Author	(AU)	X	X
Sponsoring Agency	(SP)	X	
Date Published	(PY)	X	X
Grant or Contract Number	(CN)	X	
EDRS Price	(PR)	X	
Journal Information	(JN)	X	X
Document Level (1-3)	(LV)	X	
Abstract	(AB)	X	X

Cataloging Fields

(Provide Information That Identifies the Article or Document)

Author

Title

Sponsoring Agency

Language

Publication Type

EDRS Price

Indexing Fields

(Organize the Articles and Documents in the Database)

Descriptors

Identifiers

Transparency #3

Abstract

- A written description of an article or document.
- **Informative abstracts** tell you briefly what the article or document says.
- **Indicative abstracts** substitute for a table of contents.
- Use abstracts to help you decide if you need to read the entire article or document.
- Abstracts are not a substitute for the text of the article or document.

Relationships Among ERIC Descriptors

Descriptor: **Ethnic Relations**

Related terms (descriptors):

cultural background

ethnic groups

regional dialects

Narrower terms (descriptors):

community control

ethnic bias

multicultural education

Broader term (descriptor):

intergroup relations

All these descriptors belong to Group Code 540, **Bias and Equity.** Other descriptors in this Group include: Anti-semitism, racism, sex discrimination, & youth opportunities.

Rotated Display of Descriptors
(Example)

1	2	3
	ABILITY	
ACADEMIC	ABILITY	
COGNITIVE	ABILITY	
CREATIVE	ABILITY	
	ABILITY	GROUPING
	ABILITY	IDENTIFICATION

Transparency #6

Alphabetical Display of Descriptors
(Example)

PARENT ATTITUDES Jul. 1966

CIJE: 1683 RIE: 2399 GC:510

SN: Attitudes of, not toward, parents (note: prior to apr80, the use of this term was not restricted by a scope note)

UF: Parent Opinions
Parent Reaction (1966 1980)

NT: Father Attitudes
Mother Attitudes

BT: Attitudes

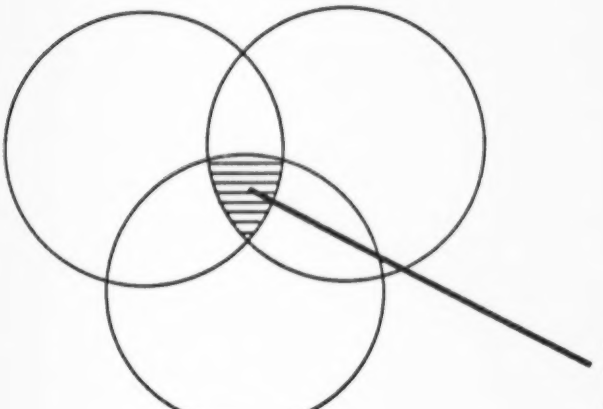
RT: Family Attitudes
Parent Aspiration
Parent Background
Parent Counseling
Parent Grievances
Parents

Transparency #7

Limiting Your Search

For example, if you want only literature reviews about experiential learning published in journals, limit your CD-ROM search like this:

(experiential learning)
AND
(document type equals information analyses)
AND
(file equals CIJE)


Experiential learning
Information analyses
File = CIJE
Literature reviews about experiential education in the journal literature

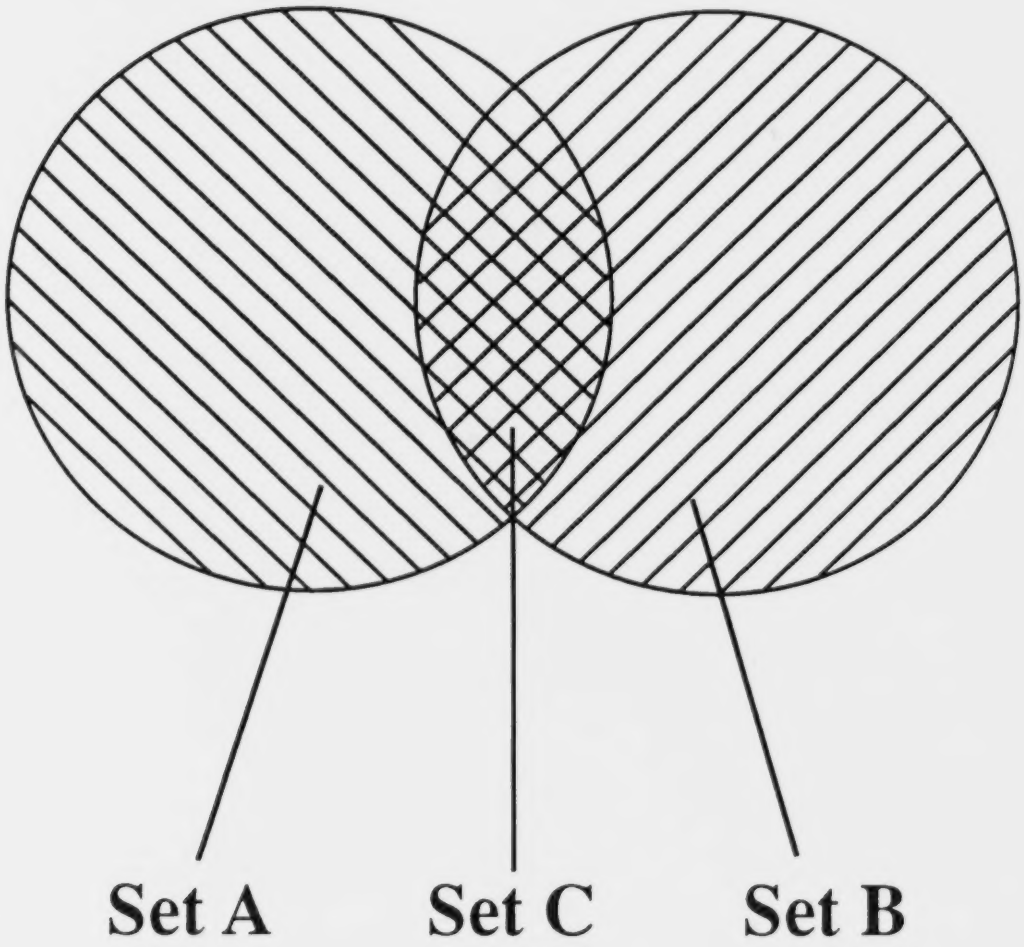


Figure 1

Elementary-education and Acceleration-education

Set A = elementary education .....11,929 resumes
Set B = acceleration-education .....143 resumes
Set C = elementary-education **and**
acceleration-education .....17 resumes

(January 1983 - September 1988)

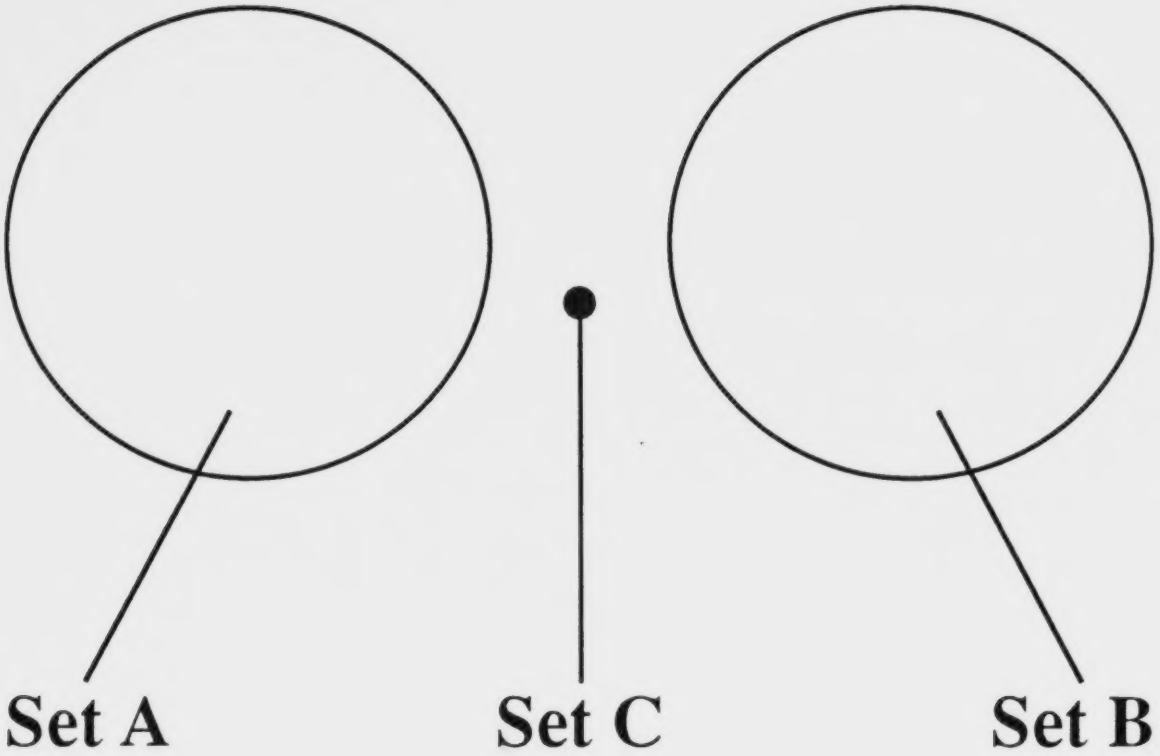


Figure 2
Advanced-placement and Elementary-school-students

Set A = advanced-placement .....71 resumes
Set B = elementary-school-students .....1,724 resumes
Set C = advanced-placement and
elementary-school-students .....0 resumes
(it doesn't exist)

(January 1983-September 1988)

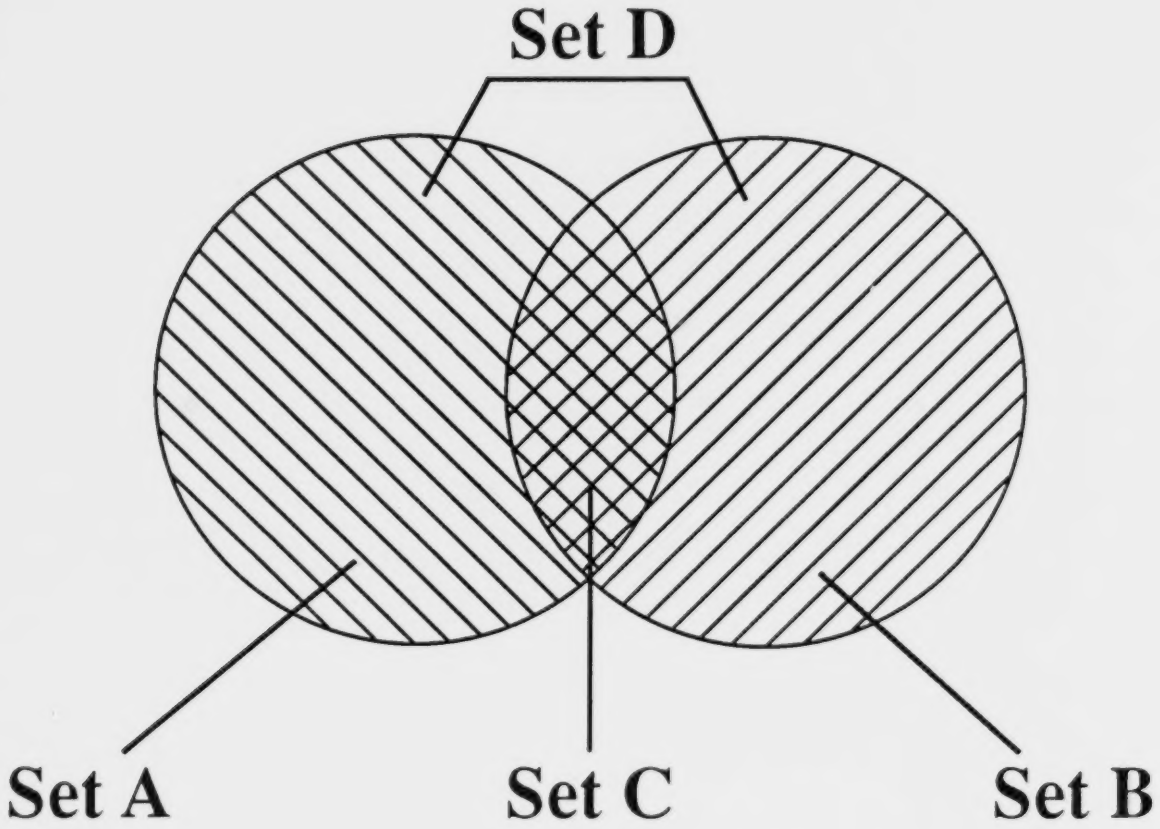


Figure 3

Elementary-education or Acceleration-education

Set A =elementary-education .....11,929 resumes
Set B =acceleration-education.....143 resumes
Set C =17 resumes that appear in
both Sets A and B
Set D =elementary-education **or** .....(11,929 + 143 - 17) resumes
acceleration-education 12,055 resumes

(January 1983-September 1988)

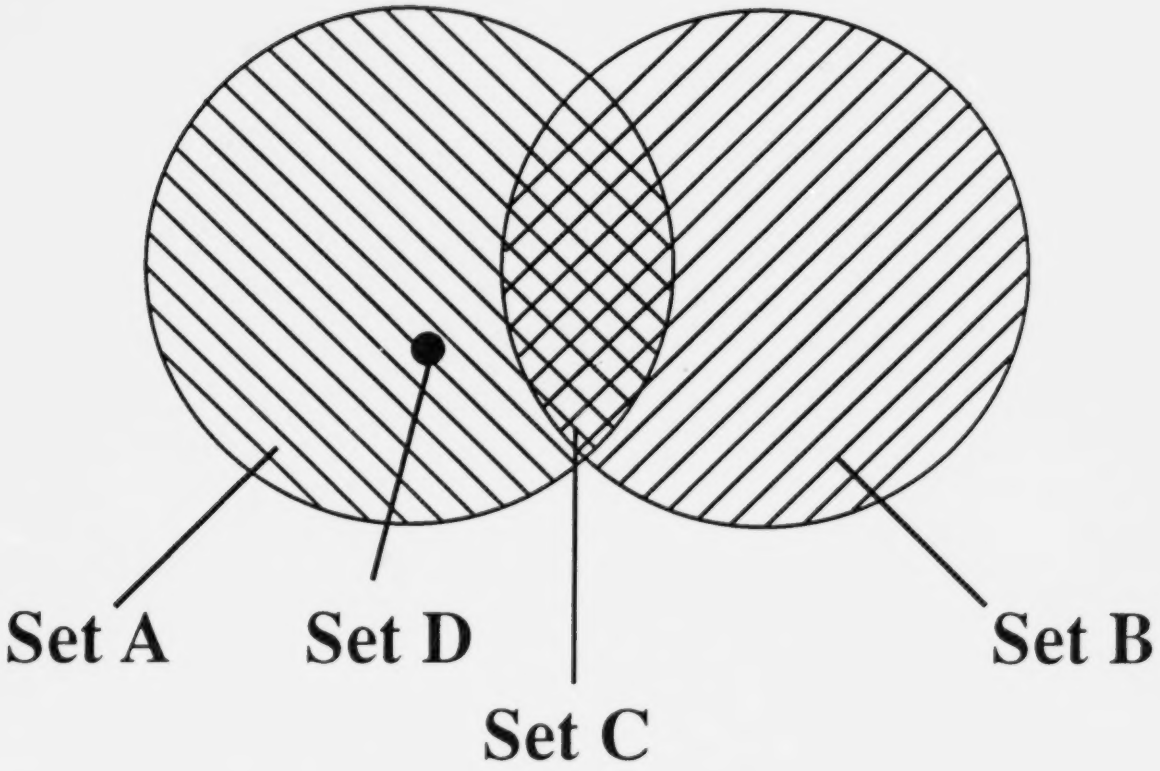


Figure 4

Acceleration-education <u>not</u> Elementary-education

Set A = acceleration-education .....143 resumes
Set B = elementary-education .....11,929 resumes
Set C = 17 resumes that appear in
both
Set A and Set B .....143 - 17 resumes
Set D = acceleration-education **not**
elementary-education .....126 resumes

(January 1983-September 1988)

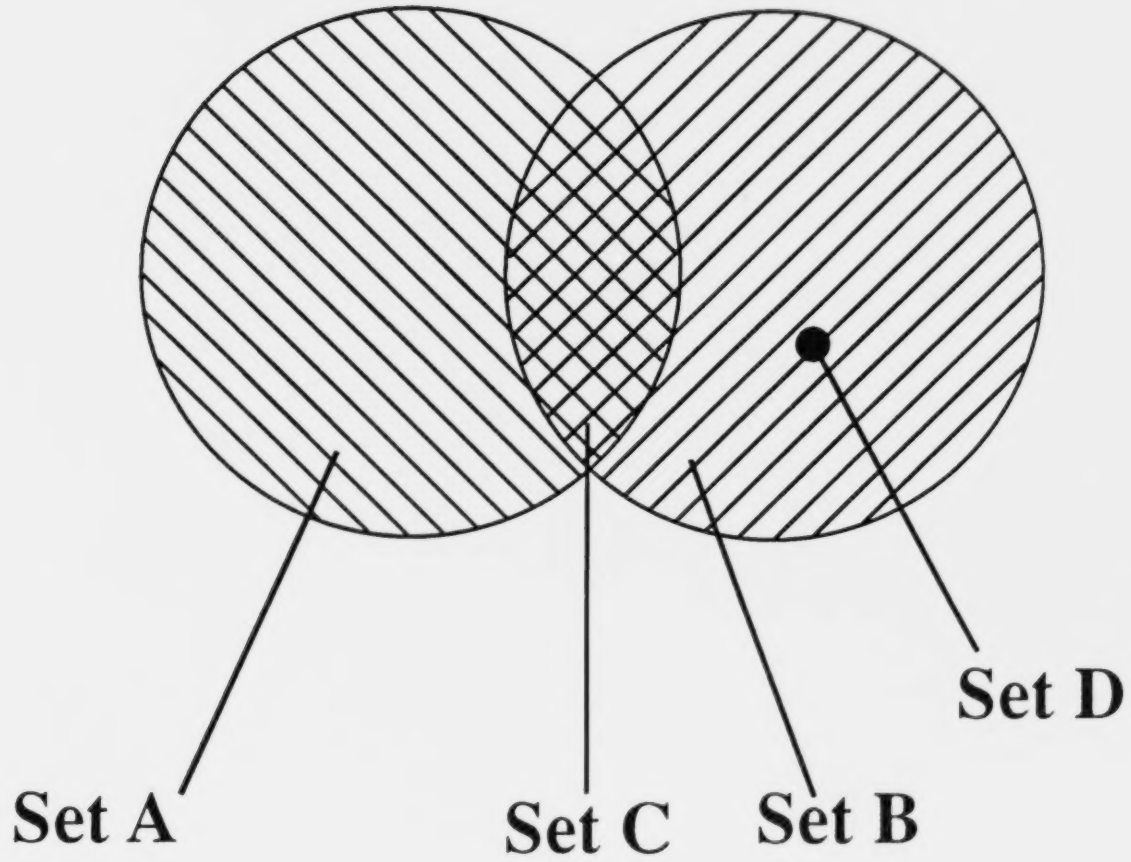


Figure 5

Elementary-education <u>not</u> Acceleration-education

Set A = acceleration-education.....143 resumes
Set B = elementary-education .....11,929 resumes
Set C = 17 resumes that appear in **both**
Set A and Set B .....11,929 - 17 resumes
Set D = elementary-education **not**
acceleration-education.....11,912 resumes

(January 1983-September 1988)

Using the ERIC Database: Quiz

Read each item carefully. Then write the letter of the best answer in the blank to the left of the item number.

____ 1. An ERIC document resume is

A. the incomplete draft of a scholarly paper submitted to an ERIC clearinghouse.

B. all the fields that describe an article or document in the ERIC database.

C. information about an author who has submitted work to an ERIC clearinghouse.

D. the abstract of a document or article.

E. the microfiche copy of a report in the ERIC database.

____ 2. Which information would not appear in a cataloging data field?

A. author's name

B. document level

C. EDRS price

D. ERIC descriptors used to index the article

E. publication date

____ 3. In translating ordinary terms into descriptors, which section of the Thesaurus of ERIC Descriptors should you turn to first?

A. the rotated display

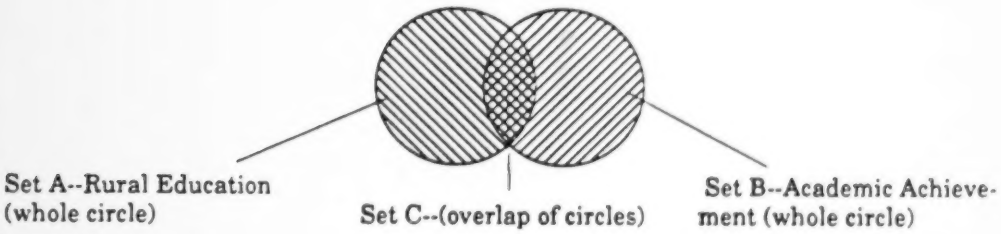
B. the subject index

C. the author index

D. the alphabetical display

E. the two-way hierarchical display

For questions 4 and 5, refer to the following diagram:



____ 4. Which set indicates "rural education AND academic achievement?"

A. Set A

B. Set B

C. Set C

____ 5. Which set indicates "rural education NOT academic achievement?"

A. Set A - minus Set C

B. Set B - minus Set C

C. Set C

____ 6. Which of the following statements is true?

A. CIJE resumes include descriptors, but RIE resumes do not.

B. RIE abstracts are longer than CIJE abstracts.

C. RIE documents are not available on microfiche.

D. Most CIJE articles are available on microfiche.

E. Indicative abstracts summarize what documents actually say.

____ 7. Level 2 documents are ...

A. available from the ERIC Document Reproduction Service as both paper and microfiche copies.

B. available from the ERIC Document Reproduction Service as microfiche copies only.

C. available from the ERIC Document Reproduction Service as paper copies only.

D. not available from the ERIC Document Reproduction Service.

E. at least 25 pages in length.

____ 8. Literature reviews are classified by the ERIC system under which one of the following publication types?

A. research/technical reports

B. evaluative/feasibility reports

C. information analyses

D. descriptive reports

E. dissertations/theses

____ 9. Reports of experimental research are classified by the ERIC system under which one of the following publication types?

A. research/technical reports

B. evaluative/feasibility reports

C. information analyses

D. descriptive reports

E. dissertations/theses

____ 10. Which of the following search statements would limit the scope of an electronic search about academic achievement to articles that report basic research?

A. (academic achievement) AND (file equals CIJE) OR (document type equals research/technical reports)

B. (academic achievement) OR (file equals RIE) OR (document type equals information analyses)

C. (academic achievement in the descriptor field) AND (file equals CIJE) AND (document type equals research/technical reports)

END OF QUIZ

Key to the Quiz

1. B
2. D
3. A
4. C
5. A
6. B
7. B
8. C
9. A
10. C

ERIC Handbook for Teachers in Training

It's the Best and It's For Teachers:

Getting the Most out of the ERIC System as a Student and as a Professional Educator

by Craig Howley, Patricia Cahape, and Phyllis Stowers

Clearinghouse on Rural Education and Small Schools

Appalachia Educational Laboratory
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800/624-9120

April 1989

The Appalachia Educational Laboratory (AEL), Inc., works with educators in ongoing R & D-based efforts to improve education and educational opportunity. AEL serves as the Regional Educational Laboratory for Kentucky, Tennessee, Virginia, and West Virginia. It also operates the ERIC Clearinghouse on Rural Education and Small Schools. AEL works to improve:

- professional quality,
- curriculum and instruction,
- community support, and
- opportunity for access to quality education by all children.

Information about AEL projects, programs, and services is available by writing or calling AEL, Post Office Box 1348, Charleston, West Virginia 25325; 800/624-9120 (outside WV), 800/344-6646 (in WV), and 347-0400 (local).

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AEL is an Affirmative Action/Equal Opportunity Employer.

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Foreword

IN MANY WAYS, the ERIC system operates the best electronic database in the world—it is easy to use, it offers a variety of services, and it costs next to nothing to use. It's there for teachers.

This manual, together with what you learn in class, should help you use the ERIC system to discover more about almost any topic in education that you need to investigate. Right now, you may be most concerned with the papers you write for college classes. Remember, however, that what you do now is training for the future.

Wherever you teach in the future, you will confront many issues and you will have many questions that you had not even thought about when you were just a student. What kind of situation will you step into in your first job? In your next job?

You can't know everything in advance, but you can be well prepared to ask questions, define problems, and search for solutions. ERIC is an important tool for that part of your work as a teacher. There is nothing else quite like it. In the ERIC database, you have, in effect, many thousands of colleagues who are sharing their ideas for instruction, and their struggles in the classroom.

And classroom work is a struggle. It can be the most rewarding struggle of your life, but it is never easy. The habit of using the ERIC system will help you make sense of your work, and it will help you help your students make sense of the world.

ERIC Resumes

INFORMATION about each article or document is given in a standard format called a "resume" [rez-oo-may]. If you take several minutes to read about that format, then you will understand better how to use the ERIC database.

Resumes appear in both the paper indexes (*Current Index to Journals in Education* and *Resources in Education*) and in the computerized versions of the database (on-line and CD-ROM). The machine-readable database contains complete resumes. To save space, the paper indexes contain shortened resumes. These sample resumes are abbreviated, too, and they are taken from one of the CD-ROM versions of the database.

Let's take a look at two examples, one for articles and one for documents. First, the article:

AN: EJ343182
AU: Rosenberg,-Ellen
TI: How Parents Can Help Ease the "Back to School" Jitters.
JN: PTA-Today; v12 n1 p13 Oct 1986
AB: Usually, children are glad to see the summer come to an end. Some are not. Here's how to help. (CB)

The upper-case abbreviations stand for particular sorts of information, as follows:

"AN:" indicates the ERIC **accession number**. This is a two-letter prefix and a six-digit identification number. The prefix, "EJ," stand for **ERIC Journal**. The "EJ" alerts you immediately to the fact that this resource is an article.

"AU:" as you might expect, stands for individual **author**, last name first. Not all authors are individuals, however. Sometimes they are institutions. This abbreviation is reserved for individual authors. **If there are three or more individual authors, this field will list the first author and the phrase "and others." See the original article for a complete list of authors.**

"TI:" stands for the **title** of the article.

"JN:" gives the name of the **journal** in which the article appeared, together with the volume number, issue number, pages, and date of publication.

"AB:" stands for **abstract**, which is a short description of the article. These abstracts have been edited to keep them short, but they are based on the longer abstracts that appear in the ERIC database. Incidentally, the two letters that end each abstract are the initials of the person who wrote the original abstract.

Now let's turn to an ERIC document:

AN: ED281966
AU: Cano,-Luis-R.
TI: Helping Your Child Learn: A Parent's Guide = Ayudando a Su Hijo a Aprender: Una Guia para los Padres.
PR: EDRS Price - MF01/PC02 Plus Postage.
PG: 49
AB: Here are ten ways to help your children learn better at school, presented in both English and Spanish. Topics include scheduling study

time; talking to the teacher; and tips for working parents. A comic strip and worksheets to help students develop good study habits and achieve goals are included. (KH)
LV: 1

This entry is a bit different from the previous one. The differences center on the fact that ERIC documents are almost always available in a format different from the journal articles. Most ERIC **documents** (but not journal articles) have been put on **microfiche** by the ERIC system.

Microfiche are about the size of 4 x 6 cards, but they are transparent. They contain miniaturized photographs of each page of a given document. Special microfiche readers and printers reproduce full-size copies of the document (called "blowbacks") Blowbacks are not beautiful, but they are readable and quite inexpensive ($2.00 for each 25 pages).

You can get them by writing to the ERIC Document Reproduction Service (EDRS). An order form is included in this handbook.

You can also visit most college and university libraries and make copies of the document yourself. That's because many academic libraries have complete collections of ERIC microfiche. Check with the reference librarian at your institution to see what ERIC resources are available locally.

Well, with that much background, let's look at what the abbreviations mean in the descriptions of our ERIC documents:

"AN:" Again, this stands for accession number, but notice that the two-letter prefix is "ED" (for **ERIC document**). The ED prefix also alerts you to the fact that the document is available as either a paper-copy blowback or a microfiche, or as a microfiche only (see the discussion of "LV:" below, for clarification of this point).

"AU:" As before, this stands for individual author. For some of the ED documents listed here, there are no individual authors. Some of the documents below do not, therefore, have an author field. A "field" is the space reserved for particular information, so we have "author fields," "title fields," and so forth.

"TI:" This field, again, gives the title, in this case the title of the ERIC document.

"PR:" This is the price field. Within the field, "MF" and "PC" stand for "Microfiche" and "Paper Copy." The attached numbers (as in PC02) help you calculate the EDRS price. For example, paper copies are currently priced in units of 25 pages, at $2.00 for each 25-page unit. The symbol "PC02" means a paper copy of the document costs two times $2.00 that is, $4.00, plus postage.

"LV:" This field describes the level of document availability from EDRS.

Level 1 availability means that documents are available from EDRS as **both** paper-copy blowbacks and microfiches. Of the documents listed below, most are level 1.

Level 2 availability means that documents are available from EDRS as **microfiche only**. If

you want paper copies of these documents, you cannot get them from EDRS. Of the documents listed below, a few are level 2.

Level 3 availability means that documents are not available from EDRS. They may be ordered from the original source, and the document resume will provide information about where to order the document.

"AB:" This, again, is the abstract field, which gives a short description of the document.

Summary of Information About Resumes.

- The fields that describe articles and journals are similar.
- For ERIC documents (ED accession numbers), pay particular attention to what the price and level fields tell you.
- Consult a librarian to help you get copies of EJ articles. There are a number of easy alternatives.
- Copies of ED documents can be ordered through EDRS. When ordering, be sure to pay attention to the level of availability. Paper copies of level 2 documents are not available from EDRS, although microfiche copies are.

Student Guide to Searching: Manual and CD-ROM

THERE ARE TWO basic ways to search the ERIC database: computer searching and manual searching. You carry out a manual search with the paper indexes. Computer searches are, however, faster and more powerful than manual searching. For that very reason they require that you know more than you would to carry out a manual search. So, we'll start with a discussion of manual searching.

A word about the form of terms used in the following examples. Multiple word ERIC descriptors in some electronic search systems are bound together by hyphens. In manual searching, however, hyphens do not appear. In the examples that foliow, however, we will be using hyphens to indicate indexing terms (most of which are descriptors). We hope these repeated examples will help you apply descriptors more effectively once you begin electronic searching. Just remember that hyphens are not used in the paper indexes.

Manual Searching

Every search starts with a question. For these simulated searches, our question is this: "Is skipping a grade harmful to elementary school children?" It's a rather controversial question, but there is an answer, and the answer is reflected in the ERIC database. The first step in our manual search will be to select and list descriptors under which to look in the paper indexes.

Descriptors are terms related to the content of the subject being searched. When developing a list of descriptors, identify the major ideas in your question. For the question above, they would probably include "skipping a grade" and "elementary school children," because the question explicitly contains these terms. We need to consider related forms of these terms, and we also need to think of ideas that are only implied.

As an example, let's make a list in these two categories (related forms and implied ideas).

Related Forms
- grade-skipping
- elementary programs
- skipping grades

Implied Ideas
- effects
- achievement

- social-emotional development
- program results
- accelerated learning
- gifted children

That's more than enough. (If you have trouble coming up with descriptors and need help, call any ERIC clearinghouse and they will be glad to help you. The ERIC Clearinghouse on Rural Education and Small Schools, which produced this handbook, has a toll-free number: 800/624-9120.)

Once you develop such a list, you're ready to use the *Thesaurus of ERIC Descriptors*. Recall that the *Thesaurus* has three sections: the Alphabetical Display, the Rotated Display, and the Hierarchical Display.

The section you'll turn to first is the Rotated Display. It's the three-column display based on words that appear in descriptors. Great, but where do you start? Start simple: take a look at the descriptors that have the word "grade" in them. Maybe "grade-skipping" will be there; if not, maybe there will be something close.

We find (p. 340-341 in the 1987 edition of the *Thesaurus*) that there are 36 descriptors that contain the word "grade" or "grades." "Grade-skipping," however, is not among them.

But are there other terms that might be useful in our search? "Age-grade-placement" looks promising. That's nice, but how promising is it? To find out, turn to the Alphabetical Display. There, you can find out how many times the descriptor has been used in the *RIE* and *CIJE*, and you can check out the related terms, and, possibly, you can read a scope note.

The relevant entry is on page 8 (*Thesaurus*, 1987 ed.). Altogether there are 114 entries in the database (*CIJE* and *RIE*). And the scope note is helpful, since it includes the following phrase: "... the relationship between age and grade level." The related terms are possibly even more helpful. They include "acceleration-(education)," "school-entrance-age," "school-readiness," "student-placement," and "student-promotion."

At this point, you might want to give up on your original list, and check out these related terms in the alphabetical display. If you do, you'll find the following information.

Descriptor	Entries in Database	Scope Note
acceleration (ed.)	76	The process of progressing through an educational program at a rate faster than that of the average student.
school-entrance-age	76	Age of students when they enroll in school.
school-readiness	198	Cognitive, physical, and psychosocial maturity prerequisite to learning in a school setting.
student-placement	2438	Assignment of students to schools or academic classes and programs according to their background, readiness, abilities, and goals.
student-promotion	192	Process by which student is passed to the next higher instruction or grade level.

All of this information is helpful, and we have not even looked at all the terms listed as being related to these descriptors.

To keep it brief, new related terms that appeared under these descriptors are as follows:

- academically-gifted,
- advanced-courses,
- advanced-placement,
- advanced-students,
- early-admission, and
- flexible-pacing.

We've done a lot of preparation now, so at this point we might decide what the most promising terms for our search are.

Let's recall that what we're seeking is information about the effects of grade-skipping on elementary students. In this light, "academically gifted," "acceleration," "advanced-placement," and "age-grade-placement" look like our best bets for a manual search.

The next step is to decide whether to search both the *CIJE* and the *RIE*, or just one of them. Ideally, you would want to review documents from both. However, the need to save time may lead you to work with only one of the two paper indexes. In making this decision you have to balance two considerations.

The kind and form of information you seek is the first consideration. Journal articles are usually subject to extensive "peer review" prior to publication, and they have a consistency of length and format that *RIE* documents do not. On the other hand, *RIE* documents represent a wide variety of work—very lengthy research reports, official publications of organizations, instructional materials developed by individuals or associations, and descriptions of programs. Much of this work may not be reported in journal articles.

Availability is the second consideration. Many journal articles will *not* be available locally, but must be ordered on interlibrary loan, from the journal itself, or from UMI. Copies are more expensive than *RIE* documents. Documents in the *RIE*, on the other hand, are almost always available in libraries with microfiche collections. You can get copies of most ERIC documents (as opposed to articles) quickly.

As you can see, deciding this question depends on the nature of your situation. If, in your manual search, you choose to search both the *CIJE* and the *RIE*, it will take twice as long as searching just one (because you will be consulting two paper indexes, instead of just one). It is definitely a question of balancing pros and cons.

Another question involved in a search is: How far back in time do you want to search? Going back to the beginning (1966)—with just the *RIE*—will require searching about 20 annual indexes. Typically, an efficient practice is to start with the most recent issues of the *CIJE* and the *RIE*, and to continue searching until you think you have answered your question. Again, this is a matter of judgment.

We've identified four descriptors to search, and for the sake of argument, let's say we are going to search the *RIE* only, back to 1983. If we find enough documents to satisfy our curiosity given that "search strategy," then we'll stop. If not, we'll reexamine our strategy, perhaps changing descriptors, examining the *RIE*, or extending our search timeline to earlier years.

Now, we're ready to turn to the latest annual volume of the *RIE*. (If we wanted to be very current we would also check the latest monthly editions of the *RIE* that have been published since the last annual volume.)

The procedure will be to check entries under first one descriptor, then the other in the *RIE Annual Cumulation—Index*. We'll scan the titles of all entries. When we see an interesting title, we'll check the resume in the *Annual Cumulation—Abstracts*, where the resumes are given in full. If we like what we find, we'll write down the title and the accession number. That will allow us to retrieve the microfiche when we decide that our search is complete.

Under "academically-gifted" in the 1987 *RIE Annual Cumulation Index*, there are 18 entries. At least three documents look like they might be interesting:

ED280222, "The Acceleration into College and Emotional Adjustment of the Academically Gifted Adolescent: A Synthesis and Critique of Recent Literature,"

ED277206, "Some Characteristics of SMPY's '700-800' on SAT-M Before Age 13 Group," and

ED277205, "The Urgent Need for an Academic Focus."

A review of the resumes indicates that, although none of the documents focuses exclusively on elementary students, two of them (ED280222 and ED277206) explicitly discuss students who complete elementary school early. We would record at least these two titles and ED numbers so we could retrieve the microfiche and make paper copies to read at home.

To complete the manual search, you would repeat this procedure with each descriptor in each annual volume of the *RIE* until you felt you had answered your question. Going back to January 1983 with four descriptors and just the *RIE* annual volumes, you'd go through the routine of scanning, reading abstracts, and recording titles and ED numbers 24 times. How long would that take? Several hours at least. In the end, however, you might have the titles of 20 documents that would help answer your question.

You could write to EDRS for paper copies, or you could make them yourself in the library, using a microfiche reader-printer. It would probably take another hour or two to print out your paper copies of 20 documents, depending on the length of the documents.

CD-ROM Searching

A complete course on computer searching with CD-ROM is beyond the scope of this *Handbook*. However, here is a list of the skills you'll need to get started:

1. minimal typing skills (knowing the keyboard is very helpful).
2. basic computer literacy (for example, ability to identify computer peripherals; basic knowledge of computer jargon and software types).
3. some experience operating microcomputers (for example, using on-screen menus, directing output to peripherals).
4. the ability to consult documentation to answer questions about software use.
5. the ability to think about search results and search strategies in terms of sets defined by logical operators.

If you have these skills, you will find it very easy to move from manual searches to computer searches.

With our CD-ROM search we will start with the same question, and we will use a similar list of relevant common English terms and descriptors. CD-ROM, however, can allow you to do many things that you cannot possibly do in a reasonable amount of time with paper indexes. It's both more powerful and more flexible than searching with the paper tools.

So, before we walk through a simulated search, let's take a look at some of the differences between CD-ROM and manual searching. For our example, we will describe the SilverPlatter CD-ROM system. The general features of the other two systems (OCLC and Dialog) that you may encounter are similar.

Like the *Thesaurus of ERIC Descriptors*, CD-ROM, too, has a list of terms under which it is possible to search. This list, however, is much longer than the list of 10,000 descriptors. Basically, the CD-ROM index includes every meaningful word used in all the resumes in the ERIC database. You can look for articles and documents under any meaningful word.

The *RIE* and the *CIJE* are based on annual and semiannual volumes. That format causes you to have to repeat your search for every year (in the case of the *RIE*) and for every six-month period (in the case of the *CIJE*). Compact disks, however, contain the entire database, at present, on two or three disks.

Hence, to cover the complete database (back to 1966), you need to repeat your search routines a maximum of three times. If you restricted your search to the years 1983-the present, you would not need to repeat your search routine at all!

In our manual search, we chose what seemed to us like the four best descriptors, and then we searched each of them in each annual edition of the *RIE* back to 1983. Working this way, we had to "keep our eyes open" for articles and documents that seemed to deal with the effects of advanced placements (or grade-skipping, or acceleration, etc.) on elementary students.

In CD-ROM searching it is possible to combine two, three,

or more terms in doing a search. Terms are connected with the combining words "and," "or," and "not." Here's how it works:

1. When you search under a particular term, for example, "advanced placement," you identify a **set** of resumes. If you search under another term, for example, "elementary-school-students" you identify another set of resumes.

2. If the terms are related, the sets will overlap to some degree. That is, each set may contain some resumes that appear in the other set.

3. With CD-ROM, you can use that relationship to help you search the database. To use the same strategy with a manual search would take weeks. With CD-ROM it takes seconds.

4. CD-ROM searching clarifies the relationship of the sets for you, with the **logical operators** "and," "or," and "not."

The following is a brief review of the three logical operators. Let's take "and" first. Suppose one set of ERIC resumes relates to acceleration-education, and another set relates to elementary-education. If you ask the computer to search the CD-ROM for "acceleration-education **and** elementary-education," your search will yield **just those resumes that belong to both sets**.

Here's a picture of the situation in this case:

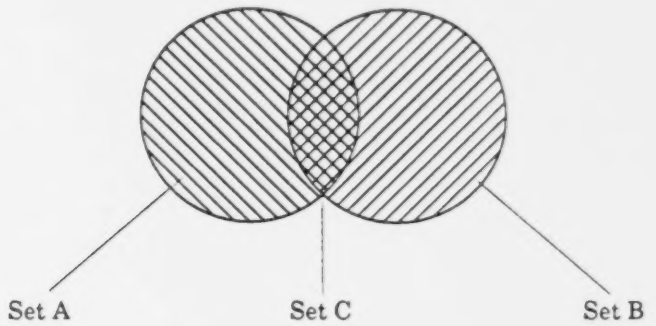

Figure 1

Elementary-education and Acceleration-education

Set A = elementary education ..... 11,929 resumes
Set B = acceleration-education ..... 143 resumes
Set C = elementary-education **and** acceleration-education ..... 17 resumes

(January 1983-September 1988)

Keep in mind that these two sets happen to overlap; but two sets don't **necessarily** have to overlap. When they don't, you need to adjust your search strategy, using different descriptors or other techniques. Many times in running a CD-ROM search you will find that there is no overlap. Adjust your terms when this happens. CD-ROM is more flexible than manual searching, but it requires that you be more flexible, too.

For example, if you combined the descriptors "advanced-placement" **and** "elementary-school-students," there would be no overlap. Figure 2 shows this case.

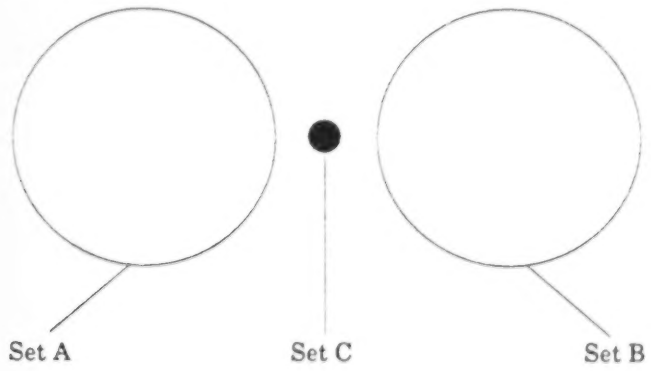

Figure 2
Advanced-placement and Elementary-school-students

Set A = advanced-placement.....71 resumes
Set B = elementary-school-students .....1,724 resumes
Set C = advanced-placement **and**
elementary-school-students .....0 resumes(it doesn't exist)

(January 1983-September 1988)

Now let's look at the "or" logical operator. Again, our example is based on the two sets considered in Figure 1 (elementary-education, acceleration-education). If you ask the computer to search the CD-ROM for "elementary-education" **or** "acceleration-education," your search will yield just those resumes related to one or the other descriptor. Figure 3 shows how this works.

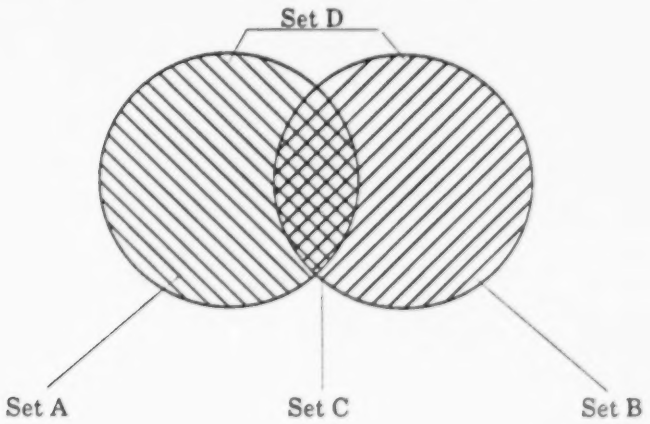

Figure 3

Elementary-education or Acceleration-education

Set A = elementary-education ..... 11,929 resumes
Set B = acceleration-education ..... 143 resumes
Set C = 17 resumes that appear in both Sets A and B
Set D = elementary-education **or** acceleration-education ..... (11,929 + 143 - 17) resumes 12,055 resumes

(January 1983-September 1988)

Now let's consider the "not" logical operator. We'll use the same descriptors, but this time the picture is rather different. The command to search for "acceleration-education" **not** "elementary-education" tells the computer to find all the advanced placement articles, but **not** to report any that contain the phrase "elementary-education." That is, in this case the logical operator defines one set (elementary-education) as a **subset** of a larger set (advanced-placement). Here's the picture:

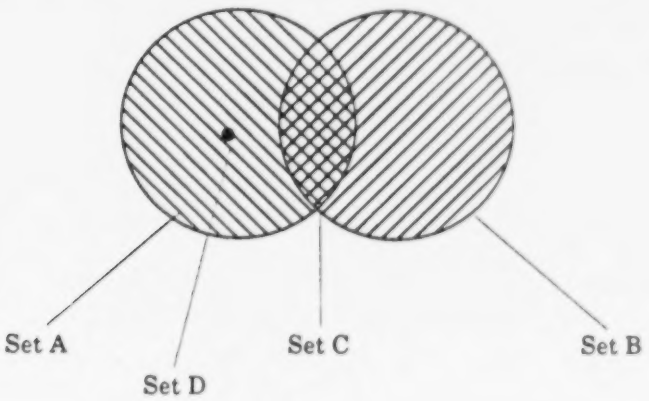

Figure 4

Acceleration-education not Elementary-education

Set A = acceleration-education ..... 143 resumes
Set B = elementary-education ..... 11,929 resumes
Set C = 17 resumes that appear in both
Set A and Set B ..... 143 - 17 resumes
Set D = acceleration-education **not**
elementary-education ..... 126 resumes

(January 1983-September 1988)

If we reversed the search command to read "elementary-education" **not** "acceleration-education" we'd get this picture. →

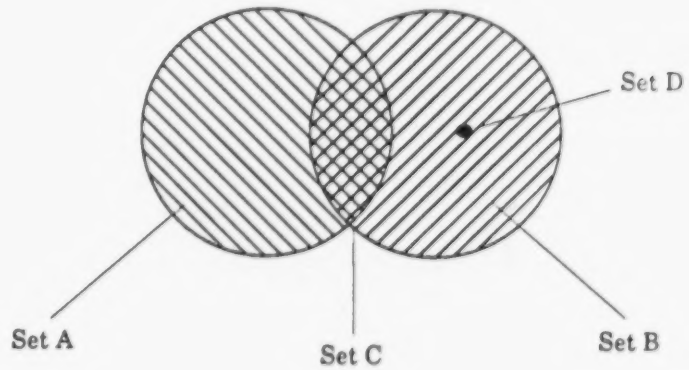

Figure 5

Elementary-education not Acceleration-education

Set A = acceleration-education ..... 143 resumes
Set B = elementary-education ..... 11,929 resumes
Set C = 17 resumes that appear in both
Set A and Set B ..... 11,929 - 17 resumes
Set D = elementary-education **not**
acceleration-education ..... 11,912 resumes

(January 1983-September 1988)

Using logical operators, you can retrieve very specific results over a wide range of topics very quickly. That's the flexibility and power of coordinated searching. Are you beginning to see how coordinated searching works? If you focus on the way those sets are defined, and keep the above diagrams in mind, it will help.

To get the feel for how well this works in practice, you need to visit a library that makes CD-ROM searching available to its clients. Remember that it takes a little while to discover all the ins and outs of computer searching. Take this *Guide* along to consult as needed. And don't be afraid to ask the librarian for a demonstration. That's what librarians are there for!

Tips on Using the ERIC Database to Develop a Reference List

THE MOST WIDELY used reference citation style in professional education is the one developed by the American Psychological Association. A complete discussion of this style appears in the *Publication Manual of the American Psychological Association*. Use the most recent edition, the third, published in 1983. This presentation is just a brief review of APA style. Consult your professor or the *Publication Manual* for fine points.

Nothing is more frustrating after you finish writing an essay, report, or article than to discover you don't have all the information you need to prepare your reference list. It helps to plan ahead. There are some features of the ERIC system that you need to take into account when you plan for your reference list.

First, of course, you need to remember the features of a reference list. Let's review the features of the most common citation style used in education, the reference style of the American Psychological Association.

In your work you are most likely to cite four kinds of publications:

- books
- journal articles
- chapters of edited books, and
- ERIC documents (reports or scholarly papers).

Each is described in slightly different ways in the reference list. Here are examples of the way such publications should be cited in an APA-style reference list. Each example is followed by a statement of the general form required by each type:

Books:

Rosenfeld, S. (1985). <u>After the factories.</u> North Carolina: Southern Growth Policies Board.

Wigginton, E. (1985). <u>Sometimes a shining moment.</u> Garden City, NY: Anchor Press/Doubleday

General form: Last name, initials for all authors. Separated by commas, ampersand (&) for last author. Period. (Year Date) in parentheses. Period. <u>Title of book (under-</u>

lined and in lower case letters except for first word of title and subtitle **if any**). Period. City and state of publication. Colon. Corporate name of publisher. Period.

Chapters in Edited Books:

Kazanjian, V., Stein, S., & Weinberg, W. (1976). An introduction to mental health consultation. In R. Clifford & P. Trohanis (Eds.), Technical assistance in special education agencies: Negotiation, delivery, and evaluation (pp. 53-69). Chapel Hill, NC: Mid-East Learning Resource System.

General form: Authors and date as for books. Period. Chapter title in lower case except for first word of title and subtitle. Period. Initial and last name of editor(s). Abbreviate, "Eds." in parentheses, comma, book title as for books underlined, no comma, page numbers with abbreviation "pp." in parentheses. Period. Place and publisher as for books.

Journal Articles:

Baird, L. (1969). Big school, small school: A critical examination of the hypothesis. Journal of Educational Psychology, 60(4), 253-260.

General form: Authors and date as for books. Period. Title of article in lower case letters except for first word of title and subtitle (if any). Journal name, capitalized, underlined, comma, volume number underlined followed immediately—no space—by (issue number in parentheses), comma, page numbers (do **not** use abbreviation "pp."). Period.

Scholarly Papers:

Rosenfeld, S. (1979, May). Rural VOC's for Rural Folks: Vocational education in the country. Paper presented at the Rural Education Seminar, College Park, MD. (ERIC Document Reproduction Service No. ED 172976)

General form: Authors as for books. Period. (Year date, comma, month in parentheses). Title as for books. Paper presented at XYZ conference, city, state. Period. (ERIC Accession Number, as formatted above, in parentheses, if paper can be found in ERIC database). No **period** following ERIC statement.

General Tips

Be alert for the following information:

- Authors: The ERIC resumes **do not** give the names of all authors if there are more than three. Make sure you look at the title page of the document to get the names of all the authors.

- Journal information: When you make copies of journal articles, make sure you write down the **volume** number and the **issue** number. It's easy to overlook this detail. If you forget, you may find yourself making a special trip to the library.

- Editors' names: If you make photocopies of a chapter in an edited book, don't forget to write down the editors' names. This detail, too, is easy to overlook.

- Month for scholarly papers (if available): The year date isn't enough for citing scholarly papers. Remember to write down the month the

paper was presented, in addition to the name of the conference, and the city and state in which the conference took place.

- ERIC accession number. First tip. Always include the ED number for ERIC documents. ERIC documents, remember, are available on **microfiche**, and microfiche are organized by ED numbers. Including the ED number helps readers locate or order ERIC documents on microfiche.

- ERIC accession number. Second tip. In the APA style, **do not** include the EJ number for journal articles. Articles have been published, and your readers can get copies of the articles from the journals in which they appeared.

Remember, consult the original publication; don't rely on the ERIC resume for your information. In some cases, all the information you need doesn't appear on the resume.

Also remember that the purpose of abstracts is to help you decide if you want to read the entire document or article. If you don't consult the original document, don't cite the work in your essay, article, or paper. Even the best abstracts are superficial summaries. They are ***not*** a substitute for the original work!

A Brief Sketch of the ERIC System

YOU NOW HAVE some idea of the sort of information collected by the ERIC system, the form in which it is described, and how to search the ERIC database.

The next logical question is, "What exactly is the ERIC system?"

Actually the ERIC database itself can answer that question in much greater detail than you are likely to want! That's because a history of the system and many of the very detailed procedures by which it operates are available from the ERIC system itself. If you're still curious after reading the description that follows, take a look at Delmer Trester's history of the ERIC system, *ERIC: The First Fifteen Years*. Its accession number is ED 195 289.

The ERIC system, working through its 16 clearinghouses and four supporting units, has developed one of the most accessible and lowest-cost databases in the world. The description that follows looks at the ERIC system from three viewpoints: first, the system as represented by its major work; second, as represented by the units of its organization; and third, as represented by its database.

The Major Work of the ERIC System.

The major work of the ERIC system is **building the ERIC database.** That statement sounds vague, but it means something quite definite. Recall that the database consists of descriptions of over 750,000 articles and documents about education produced since 1966. In other words, the ERIC system collects and describes, on average, about 35,000 articles

and documents each year. Then it organizes them and makes them available to the public. That's a lot of reading, writing, editing, and printing.

But database building is just the beginning. The database and the descriptions of ERIC journal articles and ERIC documents are put together for one main purpose—to make them available to users. **Serving users,** then, is another main focus of the ERIC system. These services include document reproduction and delivery (including an electronic facsimile [FAX] service), electronic searches of the database, and workshops for various groups of users.

Finally, as the database grows in size, the ERIC system is **publishing summaries and syntheses** to help educators and citizens overview significant new literature in the database. The various specialized units of the system develop a variety of publications that pull together information about new topics or about topics of persistent interest. Sales of these publications are another service provided to users. These publications are also available as blowbacks from EDRS.

Units in the ERIC System.

The ERIC system does not do all its work in a single location; it is a decentralized system. The major units in the system, their specialized function, and their locations are indicated below:

1. **Sixteen clearinghouses** build the database by gathering and describing articles and documents in 16 specialized fields. Clearinghouses conduct all three functions described above. They are located in different cities around the nation, and they are hosted by a variety of organizations.

2. **Central ERIC** is the central administrative unit of the ERIC system. It is located at the U.S. Department of Education in Washington, D.C.

3. The **ERIC Document Reproduction Service** (EDRS) produces microfiche and paper copies of ERIC documents, so its main function is user services. It is located in Alexandria, Virginia.

4. The **ERIC Processing and Reference Facility** coordinates the editing and computer processing involved in the production of the ERIC database. It is located in Rockville, Maryland.

5. **Oryx Press** edits and publishes the *CIJE* and the *Thesaurus of ERIC Descriptors.* It is located in Phoenix, Arizona.

Glossary of ERIC Terms

AB "Abstract." An abstract is a brief description of an article or document. For ERIC Documents (ED accession numbers), abstracts can be up to 250 words in length. For ERIC journal articles (EJ accession numbers), abstracts can be up to 50 words in length. It is a field in ERIC resumes.

Alphabetical Display The "Alphabetical Display of Descriptors" is the first section in the *Thesaurus of ERIC Descriptors*. The Alphabetical Display is the most complete display of the usage of ERIC descriptors.

AN "Accession Number." The accession number is the six-digit ED number assigned to ERIC documents or the six-digit EJ number assigned to ERIC journal articles. It is a field in ERIC resumes.

article ERIC articles come from over 780 journals that publish studies, and essays, and other features about education. Each journal is assigned to one of the 16 clearinghouses. Some journals are covered "comprehensively," which means all articles are described by ERIC. Many journals, however, are covered "selectively," which means only articles selected by the clearinghouse staff are described.

blowbacks Refers to paper copies enlarged from microfilm or microfiche copies of the original document.

BT "Broader Term." This abbreviation appears in the Alphabetical Display of Descriptors in the *Thesaurus of ERIC Descriptors*. It tells you that the given descriptor is more focused than the cited broader term.

CD-ROM "Compact-Disk, Read-Only-Memory." You are probably familiar with audio CDs. They can contain at least an hour of digitized music. When used to store digitized text, they can hold 200,000 typed pages.

CIJE "Current Index to Journals in Education." The *CIJE* is the paper index for journal articles described by ERIC. Issued in monthly volumes and in semiannual cumulative volumes. Used in manual searches of the ERIC database.

clearinghouse The core work of the ERIC system is divided among 16 clearinghouses, each operating within a carefully defined specialty. Subject area experts scan the relevant literature in each clearinghouse, describe the best for the ERIC database, develop new publications in their scope areas, and provide services to clients who call, write, or visit.

database This is computer-age lingo for an archive. A database is an organized body of information. This *Guide* describes the organization of the ERIC database, which is a body of information that describes articles and documents about education.

DIALOG DIALOG is a commercial "information utility." It provides computer access (over phone lines) to a variety of—you guessed it—databases. It also produces the ERIC database on CD-ROM.

Digest ERIC Digests are 1000-1500 word essays on critical or emerging topics in education. They are written simply and clearly, as an introduction to the topic, for a wide audience.

document ERIC documents comprise one-half of the ERIC database, the education literature that does not appear in journals. Documents can be reports, opinion papers, essays, papers presented at conferences, curriculum guides, and so forth. They are described in *Resources in Education* (the *RIE*). Accession numbers for ERIC documents all begin with the letters "ED."

EDRS "ERIC Document Reproduction Service." Located in Alexandria, VA, EDRS produces the ERIC microfiche on which ERIC documents are filmed. EDRS also produces microfiche and paper copies of ERIC documents for individual users. Orders can be placed by calling 800/227-3742.

ERIC "Educational Resources Information Center." The ERIC system consists of 16 clearinghouses and 4 supporting units.

Facility "The ERIC Processing and Reference Facility." The facility coordinates the editing and computer processing involved in the production of the ERIC database. It is located in Rockville, Maryland.

field In an electronic database, a field is a place reserved for a particular kind of information, for example, the name of an author, the title of an article, and so forth. Each field has a name. In the examples of the ERIC database on CD-ROM in this *Guide*, field names are given as two-letter abbreviations.

GC "Group Code." The approximately 10,000 ERIC descriptors belong to one of 41 descriptor groups. The Group Code numbers in the Alphabetical Display refer to these descriptor groups. The groups to which the Group Code numbers refer are described at the back of the *Thesaurus of ERIC Descriptors*.

interlibrary loan Most libraries help their clients get books or articles that are not available locally. They do this by getting the books or articles from other libraries. When they do this, they are making an interlibrary loan.

LV "Level." A field in the ERIC database that tells whether the document is available as both a paper reproduction and a microfiche reproduction (level 1), a microfiche reproduction only (level 2), or whether it is not available at all from the ERIC system (level 3). The database, however, gives the information needed to order level 3 documents from the original source.

MF01, MF02, MF03, etc. "MF" stands for "microfiche." These codes appear in the PR ("price") field in the ERIC database and help you determine the EDRS price for a given document. The price per microfiche (which contains up to 96 pages) is currently eighty-five cents ($ .85). The code "MF03" means that you multiply the price per microfiche times 3 to find the price of the microfiche reproduction for a document carrying that code (that is, 3 x $ .85 = $ 2.55).

microfiche A microfiche is about the size of a 3 x 5 index card. It is a form of "micrographic reproduction." Micrographics allows bulky documents to be stored in a minimum amount of space. From microfiche, a full-size document can be recreated as a blowback. Level 1 and level 2 ERIC documents are stored as microfiche.

microfilm Microfilm is the micrographic medium (see microfiche, above) used to store articles in journals. Many libraries archive their journals as microfilm. Microfilm is produced as a roll of film, and one roll may contain several years of articles in a particular journal. Full-size documents can be created as blowbacks.

NT "Narrower Term." In the Alphabetical Display of Descriptors, narrower terms to which the given descriptor is related are noted.

on-line Refers to computer activity carried on over telephone lines. On-line searching of the ERIC database is provided by a number of commercial firms.

PC01, PC02, PC03, etc. "PC" stands for "paper copy." These codes appear in the PR ("price") field in the ERIC database and help you determine the EDRS price for a given document. The price per paper copy is based on units of 25 pages. The code "PC03" means that you multiply the price per 25-page unit times 3 to find the price of the paper copy reproduction for a document carrying that code (that is, 3 x $ 2.00 = $ 6.00).

PG "Pages." The field in the ERIC database that reports the number of pages in an article or document.

PR "Price." The field in the ERIC database that helps you calculate the EDRS price for an ERIC document. (See "MF01, MF02, MF03, etc." and "PC01, PC02, PC03, etc.," above.)

reader/printers Reader/printers are machines on which users can read micrographic media (microfiche and microfilm), as well as produce full-size blowbacks.

resume In the ERIC database, a resume is the complete description of an ERIC document or journal article. A resume contains many fields, including a complete abstract that summarizes the content of the article or document.

RIE "Resources in Education." The *RIE* is the index of ERIC documents (not journal articles) published in monthly installments and in annual cumulative volumes.

Rotated Display The second section of the *Thesaurus of ERIC Descriptors*, particularly useful for translating common English into the language of the thesaurus.

RT "Related Term." In the Alphabetical Display of Descriptors, terms to which the given descriptor is related at the same level (that is, neither broader nor narrower) are noted.

SN "Scope Note." Scope notes appear in the Alphabetical Display of Descriptors, and they tell how the ERIC system has agreed to use a descriptor. Not all descriptors have scope notes, however.

Thesaurus of ERIC Descriptors The key to using the ERIC database effectively, the thesaurus shows how descriptors are related to one another, tells how many times each descriptor has been used in the database, and often provides a guide to the meaning of the term (in scope notes) as used by the ERIC system. The descriptors are displayed in three ways: alphabetically (in the Alphabetical Display), as modified common English words (in the Rotated Display), and hierarchically (in the Two-Way Hierarchical Display).

TI "Title." The field in the ERIC database that reports the title of an ERIC document or article.

Two-Way Hierarchical Display The Hierarchical Display is the third major section of the *Thesaurus of ERIC Descriptors*. It shows the relationship of a descriptor to its related terms—narrower, broader, and at the same level.

UF "Used For." This code appears in the Alphabetical Display of Descriptors, and gives other terms that the descriptor is used for. Sometimes, descriptors are removed from the thesaurus, and they will be listed as UFs. Sometimes, terms commonly used in the literature, but not in the thesaurus, are listed as UFs.

UMI "University Microfilm International." UMI produces microfilm copies of ERIC journals, and will also produce paper copies for individual clients.

ERIC Clearinghouse on Rural Education and Small Schools
CRESS

FOR IMMEDIATE RELEASE

Re: ERIC for Teachers in Training: An Instructional Package for Professors

Date: July 20, 1989

The Educational Resources Information Center (better known as ERIC) is an essential tool for professional educators. Educators can--and do--turn to ERIC throughout their careers, and ERIC for Teachers in Training aims to cultivate students' skills to that end. What better place to introduce them to ERIC than in education classes?

ERIC for Teachers in Training is a set of instructional materials to help professors show their students how to use the ERIC system effectively. Teacher educators and ERIC experts reviewed the materials and tested them with education classes before publication.

The materials are most immediately applicable to classroom projects and papers, of course. However, the instruction also cultivates students' understanding of the relevance of the ERIC database to the real-life work of teaching. The materials include a handbook for students to keep as a reference work.

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ERIC/CRESS at AEL • Appalachia Educational Laboratory •1031 Quarrier Street • P.O. Box 1348 • Charleston, WV 25325
800/624-9120 (outside WV) • 800/344-6646 (in WV) • 347-0400 (Charleston area)
AEL is an affirmative action/equal opportunity employer

ERIC has developed a national collection of articles and documents about schooling, many written with teachers in mind. The collection--otherwise known as the ERIC database--includes descriptions of nearly three-quarters of a million articles and documents. ERIC documents include curriculum guides, instructional materials, research reports, evaluation reports, literature reviews, and demographic information. Virtually every topic and kind of document is represented in the database. Over 95% of the documents are available on microfiche, from which paper copies can be made. The ERIC Document Reproduction Service (EDRS) provides microfiche or paper copies of the original documents at modest cost.

The key to accessing these resources is learning to search the ERIC database. The instructional materials show students how to do both manual searching and electronic searching. They explain the new compact disk technology that makes electronic searching much more useful for students than on-line searching.

The new materials include a handbook for professors, masters for making multiple copies of a handbook for students, lesson plans, transparency masters, and a formative quiz to assess students' learning. The handbook for protessors also includes a section with ideas for guiding students' writing.

ERIC for Teachers in Training: An Instructional Package for Professors is available for $10.00 from the ERIC Clearinghouse on Rural Education and Small Schools, P.O. Box 1348, Charleston, WV 25325. The Clearinghouse maintains a toll-free number, 800/624-9120, and telephone orders are welcome. There are discounts on bulk orders.

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